

CS 5030 : NETWORKS & CYBERSECURITY

<i>Semester Hours:</i>	3.0	<i>Contact Hours:</i> 3
<i>Coordinator:</i>	Sankardas Roy	
<i>Text:</i>	Computer Networking: A Top-Down Approach	
<i>Author(s):</i>	Kuros and Ross	
<i>Year:</i>	2017	

SPECIFIC COURSE INFORMATION

Catalog Description:

This course provides an intensive study in the fundamentals of networks/networking and cybersecurity. Cannot be counted towards MS in CS. Approved for distance learning.

Prerequisites: Admission to MS in CS program or permission of instructor.

Course type: **Required**

SPECIFIC COURSE GOALS

- Justify the need for, and describe the working of, layered protocol suites, such as TCP/IP.
- Motivate the need for and summarize the details of service architectures, such as web services and micro-services
- Evaluate the performance of routing protocols
- Use basic cybersecurity tools
- Explain common privacy and security issues of using various devices
- Deploy counter measures to various privacy and security issues

LIST OF TOPICS COVERED

- Computer Networks (~ 50%)
 - Layered Protocol Architectures
 - TCP/IP
 - Client-Server Applications
 - Transport and Routing
 - Service Architectures
 - Multimedia
 - Wi-Fi and Cell Networks
- Cybersecurity (~ 50%)

- Fundamentals of Cybersecurity
- Ethical issues
- CIA Triad: Confidentiality, Integrity, and Availability
- Security issues in networks and devices
- Security issues in social networks
- Common attack schemes
- Protecting personal devices